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Authors / Autores

António M. Peres (Instituto Politécnico de Bragança, Portugal)
Lillian Barros (Instituto Politécnico de Bragança, Portugal)
Luís G. Dias (Instituto Politécnico de Bragança, Portugal)
Isabel C.F.R. Ferreira (Instituto Politécnico de Bragança, Portugal)

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Application of GC-MS to characterize the volatile composition of fruit distillates made with honey

Teresa Delgado[a,*], Ilda Caldeira[b,c], Ofélia Anjos[a,d,e]

[a]*Centro de Biotecnologia de Plantas da Beira Interior, Apartado 119, 6001-909 Castelo Branco, Portugal;*
[b]*INIAV, Unidade Estratégica de Investigação e Serviços de Tecnologia e Segurança Alimentar, Laboratório de Enologia, Unidade de Investigação de Viticultura e Enologia, Dois Portos, Quinta da Almoínha, 2565-191 Dois Portos, Portugal.*
[c]*ICAAM— Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Universidade de Évora, Pólo da Mitra, Ap. 94, 7002-554 Évora, Portugal*
[d]*Instituto Politécnico de Castelo Branco, Apartado 119, 6001-909 Castelo Branco, Portugal*
[e]*CEF, Instituto Superior de Agronomia, Universidade de Lisboa, 1349-017 Lisboa*

**teresadelgado86@hotmail.com*

Distilled spirits could be made from several fermented sugar-based materials. Many of the spirits produced with fruits have the disadvantage of a higher methanol content [1] as result of enzymatic degradation of the pectins [2], which are present in high amounts on the seeds and skins of the fruits [3]. By the contrary the honey spirit, with an alcoholic strength ranging between 37.4% and 53.0%, exhibited a methanol content quite null which is an advantage for these beverages, due to well know and studied neurotoxicity of this compound [4]. Additionally this beverage has a very interest sensory attributes, namely: fruity, floral, sweet, vegetative/herbaceous, smoky, sweet and bitter [5].
In this context, the aim of this study was to evaluate the volatile composition of some spirits combining fruit and honey.
It was quantified the methanol, acetaldehyde, ethyl acetate and higher alcohols content of four spirits produced: with cherry; with cherry and honey; with madrono; madrono and honey.
The methanol, acetaldehyde, ethyl acetate and higher alcohols were quantified by GC-MS equipped with a fused silica capillary column of polyethylene glycol. Compound concentrations were determined by direct injection of the distillate and compared the peak area of each sample with the calibration curve obtained with the standards. The carrier gas used was helium.
The results showed a decrease of the total fusel alcohols for the spirits with honey adition in comparison to the corresponding fruit spirits without honey. The concentration of volatile compounds variation depend of the fruit used in the spirit prodution. However, the 1-Propanol content decrease in the fruit spirit produced with honey adition. The best advantage for these new beverages is the decrease of the methanol content as well a small decrease of the acetaldehyde content.

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